



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

The maps deal with eleven lochs near the northwest coast of Scotland that drain into Loch Ewe and with two other lochs that fall into the sea just outside the entrance to Loch Ewe. The total drainage area is about 220 square miles. Loch Maree, much larger than all the others together, is the largest sheet of fresh water in Scotland north of Loch Ness. Its length is $13\frac{1}{2}$ miles and its maximum breadth a little over 2 miles, and it is noted for the great number and proportionate large area of its islands. In the geological sheet, the surface geology is generalized from the maps of the Government surveys. The sheets are fine products of the Bartholomew map house.

ATLASES.

STIELER'S HAND-ATLAS.—Neue neunte Lieferungs-Ausgabe. 100 Karten in Kupferstich. Parts 35 and 36. Justus Perthes, Gotha, 1904. Price 60 pf. for each part containing two map sheets.

Of the four maps the only new one is "Russland und Skandinavien, Übersicht." Scale 1:10,000,000, or 157.8 statute miles to an inch. There are insets of St. Petersburg and its environs on a scale of 1:500,000, or 7.8 statute miles to an inch, and of Moscow on a scale of 1:150,000, or 2.38 statute miles to an inch. No. 8 is a revision of the general map of the German Empire and Nos. 51 and 52 are Sheets 1 and 2 of Domann's Map of the Balkan Peninsula in four sheets.

Parts 37 and 38.

Sheet 50 is a revision of the general map of the Balkan Peninsula. Sheet 59, "Klein-Asien, Syrien, &c.," covers the same territory and includes the same insets as its predecessor, but is a new map, having been entirely re-drawn to embrace the results of recent surveys and explorations. Considerable change is to be observed in the contour of the lakes of central Anatolia as now mapped. The large region of the Salt Waste between Koma and Tuz-Tsholu, almost blank on the earlier maps, is filled, on this sheet, with considerable topographic detail. Sheet 99 (sheet 5 of South America) gives the southern part of the continent and a very clear delineation of the new boundary between Argentina and Chile with the many geographical discoveries resulting from these surveys. An inset of the Isthmus of Panama is introduced; in the inset of Valparaiso the outlines of the proposed harbour improvements are sketched. Sheet 100 (sheet 6 of South America), which shows only the estuary of the Rio de la Plata with the enviroing territory in the northwest corner of the plate, replaces the old insets with new maps of the cities of Buenos Aires and Rio de Janeiro and the southern States of Brazil. The settlements of the German colonists, which are very numerous in Rio Grande do Sul and Santa Catharina, including the new colonies recently founded in the forest region of northern Rio Grande do Sul, are admirably presented.

FRENCH EXPLORATION BETWEEN THE UBANGI AND LAKE CHAD.

The mission sent out by the French Government to study the large region between the northern bend of the Ubangi River and Lake Chad crossed the basin of the Shari River from southeast to northwest, and was engaged for two years (1902-3) in the work. Mr. Aug. Chevalier, the naturalist, was leader of the expedition,

whose work embraced studies of the agricultural and forest products of that part of Central Africa, the distribution of minerals, the social condition of the natives, and the prospects of development. The results, which were important, are here summarized from Mr. Chevalier's account of the expedition appearing in *La Géographie* (May, 1904).

The region traversed is politically in the French Congo, though the larger part of it is not in the basin of Congo but in that of the Shari River. Generally speaking, Mr. Chevalier says that France has in the French Congo one of the finest colonies, but its resources cannot be made effective without capital, well-paid commercial agents, and equipment for economic development; and these things are as yet lacking.

In ascending the Congo and Ubangi from Brazzaville to Fort de Possel, Chevalier describes the transition from the grass lands of the Congo covered with high herbage to the equatorial forest zone through which the lower Ubangi flows. The chief economic resource of the Congo grass lands are two shrubby specimens of *Landolphia* (rubber); while in the forest zone the useful products are more numerous, and include kolo, wild coffee, vanilla, and copal, besides rubber-yielding vines and the *Funtumia elastica*, the only indigenous rubber tree in Africa. The field crops, such as manioc and bananas, thrive luxuriantly, but, on the whole, this forest region is not yet yielding results commensurate with its latent wealth. The Bonjo natives, who inhabit the northern part of the forests, are cannibals, and, like the Niam-Niams, the cannibals further east, whom Schweinfurth described, are superior to many native tribes. They cultivate over twenty vegetables, and are advanced in iron, wood, and pottery working; yet they are very miserable, for war, disease, and famine have greatly weakened them.

Navigation on the middle Ubangi, with its stretches of rapids, is still very difficult, for nothing has been done to improve it.

At Fort Sibut, north of the Ubangi, an agricultural experiment station was started, and in two months the seeds of 460 varieties of plants were sown or plants transplanted into the garden. The plan is to thoroughly test the adaptability of this region for the cultivation of a large number of African and European fruits, grains, and other plants.

On Nov. 11, 1902, the leader, accompanied by Mr. Courtet, set out from Fort Crampel to the northeast to explore the country of the Sultan Snussi, whose chief town is Ndellé. The water-parting between the Ubangi and Shari basins was formerly well populated,

but has been turned into a desert by famine, war, and the flight of the natives to avoid the portage service. Just north of the water-parting begins the habitat of the Manjias, also cannibals, who are considerably advanced in their arts, though misfortunes have reduced them to a wretched condition. They are grouped in a number of patriarchal clans, and seem to have come originally from the west, though their neighbours, the Bandas, are immigrants from the east.

The journey to Ndellé took twelve days across a region depopulated in many places by slave-raiding. Snussi is the most remarkable black chief Chevalier has met in Africa, and much is to be expected by securing his participation in the efforts of the French to develop his country. He received the explorers with the greatest cordiality, and gave them much information for their maps. For thirty years he had travelled extensively in Dar-Fertit (The Country of Savages), and was able to give them much geographical data. He supplied guides to take them to the elevated region where the Congo, Shari, and Nile basins meet. Here they found a new species of wild coffee, a tree fifty to sixty feet in height, which Mr. Chevalier named *Coffea excelsa*. Its bean has an exquisite aroma, and was seen twenty years ago by Mr. Rivière in the markets of Tripoli. The Arabs know it well, as it is exported to Wadai.

Snussi thought it unsafe for the explorers to visit the Mamun marshes, but finally permitted them to make the journey under the protection of an escort. They had heard that these so-called marshes were really an inland sea, comparable with Lake Chad, but they found nothing but a marshy plain about 100 miles long, in which the five rivers, Tete, Mosuburta, Bungul, Minjia, and Kumara, converge. No European had previously seen these rivers excepting the Minjia, which Potagos reached near its source.

The name Mamun is especially applied to a lagoon, $2\frac{1}{2}$ miles long, and 240 feet wide, the haunt of hippopotami, in the centre of a tract which must be largely under water at the close of the rainy season. This region is the counterpart of the more westerly marshy districts between the middle Shari and the Mayo Kebbi, recently described by Lenfant (BULL., No. 7, 1904, p. 429). The clay soil of its wide, bare plains is unproductive, but there are many varieties of game. Among the larger fish in the rivers is the huge *Lates Niloticus*, and in the stagnant waters are two remarkable fish. One of them, the *Protopterus*, called *Abkur* by the Arabs, encloses itself in a cocoon when the marshes dry up, and is several months without water; the other is the *Malopterurus*, which gives

a violent electric shock to those who touch it. The *Bojene*, a fly of the genus *Glossina*, infests the marshes, and, like the tsetse, its bite is fatal to horses and cattle. Returning to Ndellé through a corner of Dar Runga, the explorers visited the curious sandstone *massif* Kuti, whose streams flow in cascades down the deep gorges under the shade of oil-palms.

Mr. Chevalier found the Sultan Snussi gathering a successful harvest from an experimental sowing of Arab wheat. His women were also sowing rice on a large scale, and the Sultan was making efforts to acclimatize cattle and horses that had been brought to him from Wadai. Under his auspices commerce is steadily increasing.

The explorers reached Fort Archambault, on the Shari, on May 22. Dr. Decorse, who had been left behind on account of ill-health, had been there over two months, and had made most valuable ethnographic and zoological collections. The district around Fort Archambault is the home of the Sara tribe, whom Chevalier regards as one of the most promising native peoples. They are exceptionally tall and well proportioned and mild and peaceable in disposition and industrious agriculturists. They have a hardy breed of small horses, which, however, are not numerous. Fine trees shade their thriving fields, which recall the fertile belt of the western Sudan.

As the expedition proceeded towards Wadai the type of the country and the people rapidly changed, and Chevalier's description of this region is very interesting. The first river met was the Bahr Keita, or Auk, in which the waters of the Bungul are combined with all the streams of the Mamun plain and Jangara. It is, however, a small stream, nearly dry in the dry season. In this zone of low-lying plains the swamps and old sand-obstructed channels absorb much of the water, so that the streams are more important in their upper than in their lower courses.

The Bahr Salamat, a little farther north, is the only river of Wadai which brings any water to the Shari. It is dry during a large part of the year, is 200 yards wide in the neighbourhood of Lake Iro, and water flows only four or five months between its banks, cut 16 feet deep in the clay. From Dar Runga to the Shari it flows through a bare plain of impermeable clay, full of depressions, which collect water during the rains. Lake Iro, measuring only 11 by 5½ miles, including the wide grassy margin which is flooded annually, is the largest basin. About a dozen tribes, each independent of the others but all of the Kulfe or Gulla stock, live

around the lake. Their villages are built on the higher grounds above the flood limits, and are fortified by fences of spiny shrubs, in the midst of which are circular clay huts with entrances, so small that the occupants must crawl in like cats. These entrances are made very small for protection against wild animals, which come during the dry season in large numbers to drink at the lake.

The people move about at ease through the mud and water during the six months of inundation; and as their legs are abnormally long for the size of their bodies, they might be taken for a special race of amphibious beings if they were not apparently nearly related to the Kabas and Eastern Saras. The latter tribe are of robust physique, but the raids of their neighbours have greatly impoverished them. Their women are greatly disfigured by the objects which they insert in their ears, noses, and lips. They introduce into the lower lip wooden discs, which are sometimes as large as a small plate.

A dreary plain with thorn scrub and dum-palms, and here and there grassy depressions inundated during the rains, stretches away into the heart of Wadai. Many of the ancient water-courses are now completely choked with sand. Other channels have an annual flow of water for one or several weeks during the year. The whole country which forms part of the belt of impermeable clay stretching from the middle Niger to the Nile must once have been traversed, like the Netherlands, by a network of channels. The greater part of Bagirmi is composed of similar country.

Mr. Chevalier gives a vivid idea of the great decadence of Bagirmi since Barth described it. Mohammedan colonies are found from the tenth parallel northward. The flow of water in the south is very uncertain and cannot be relied upon for regular navigation. Rabah, in founding his short-lived empire before the French entered the Central Sudan, destroyed Massenya, the capital of the country, and Chekna is now the capital. It stands on the bank of the Ba-Mbassa and when the bed of this stream is dry, from March to October, the town is almost without water and presents a miserable appearance. Most of the goods in its market are of English origin, coming chiefly from Yola, on the Benue. The trade, however, is insignificant. The traffic across the Sahara through Kanem has entirely ceased, but a small amount comes from Khartum through Wadai. Massenya is merely a heap of ruins.

The Sultan of Bagirmi received the expedition very cordially. He is, like Snussi, one of the great personages of that part of Africa; but much time will be required to restore the State to its former

prosperity, even though France may do everything possible for its recuperation. Barth estimated the population at 1,000,000, but the inhabitants now number only one-tenth as many. The country, however, has the elements of well being, though the whole northern part of it, in the clay zone already mentioned, is exceedingly poor.

Mr. Chevalier saw many signs that the water systems of this part of Africa were formerly of much greater extent. He thinks it probable that a great river once flowed north across the Sahara to the Mediterranean, Lake Chad being merely a back water. The abundant relics of the Neolithic Age, found in northern Wadai and in the regions adjoining the Bahr-el-Ghazal, indicate that prosperous communities once lived there. Vegetable and animal remains found in these countries give many proofs of a progressive desiccation, and of the invasion of the Sudan by a Saharan climate.

The process is not regularly progressive, for Lake Chad has sometimes spread beyond its usual bed as a result of several years of abundant rainfall. Large areas have thus been flooded, and the lake has retreated to its former limits only after a number of years. In 1870 the lake rose to an unusual height; and another rise took place in 1897, but since that time the waters have continued to fall. As a result of the drought in 1902, Lake Fittri completely dried up in the following year, and hippopotami which inhabited it have gone elsewhere. The same fate has overtaken other lakes. He says no illusions should be cherished as to the value of Kanem, which borders Lake Chad on the northeast, for it is a dried-up country.

In spite of the present ruin resulting from generations of slave-raiding, Mr. Chevalier says that the resources of the Central Sudan will give it large value when the policy of peaceful development has borne fruit. He divides the Central Sudan into three zones, each with its proper products, the intermediate one having the largest population and the richest agricultural opportunities.

BOOK NOTICES.

Railways in Rhodesia. By E. H. Smith Wright. With a Description of the Victoria Falls by E. F. Knight. 56 pp., 3 maps and many illustrations. London: British South Africa Company, 1904.

A handsomely-printed book, giving the history of the development of railroads in Rhodesia, including many novel incidents connected with the work. It appears that the Portuguese Government,